



# FIU

FLORIDA INTERNATIONAL UNIVERSITY  
*Miami's public research university*

and



# US Army

## ***Opportunities for Collaboration***

*Presented by:*

**Ali Ebadian**

Director

Hemispheric Center for  
Environmental Technology

***Florida International University***

**July 30, 2002**



# About FIU



*Carnegie Doctoral/Research University-Extensive Institution*

*Over 31,800 students, placing it in the top 1% in enrollment size of all universities nationwide*

*Florida's only public urban university with a chapter of Phi Beta Kappa*

*Top producer of Hispanic graduates in the US; third largest producer of minority graduates*





# About FIU

*FIU has a total of 4,500 employees, placing it among Miami-Dade County's 20 largest employers.*

*The University has an economic impact of more than \$1.4 billion on the South Florida economy.*

*Sponsored research funding from outside sources grew to a record \$61.2 million in 2000-01*

*The University's 2001-02 operating budget is \$433 million*



# About FIU



**1**

**Urban**

**3** φβκ

**4 Public**

**FLORIDA**

**5 Carnegie R-I**

**NATIONAL**

36 Law & Architecture

78 φβκ

102 Public Research Intensive

151 Classified Carnegie Research Intensive

261 Offering Doctoral Degrees

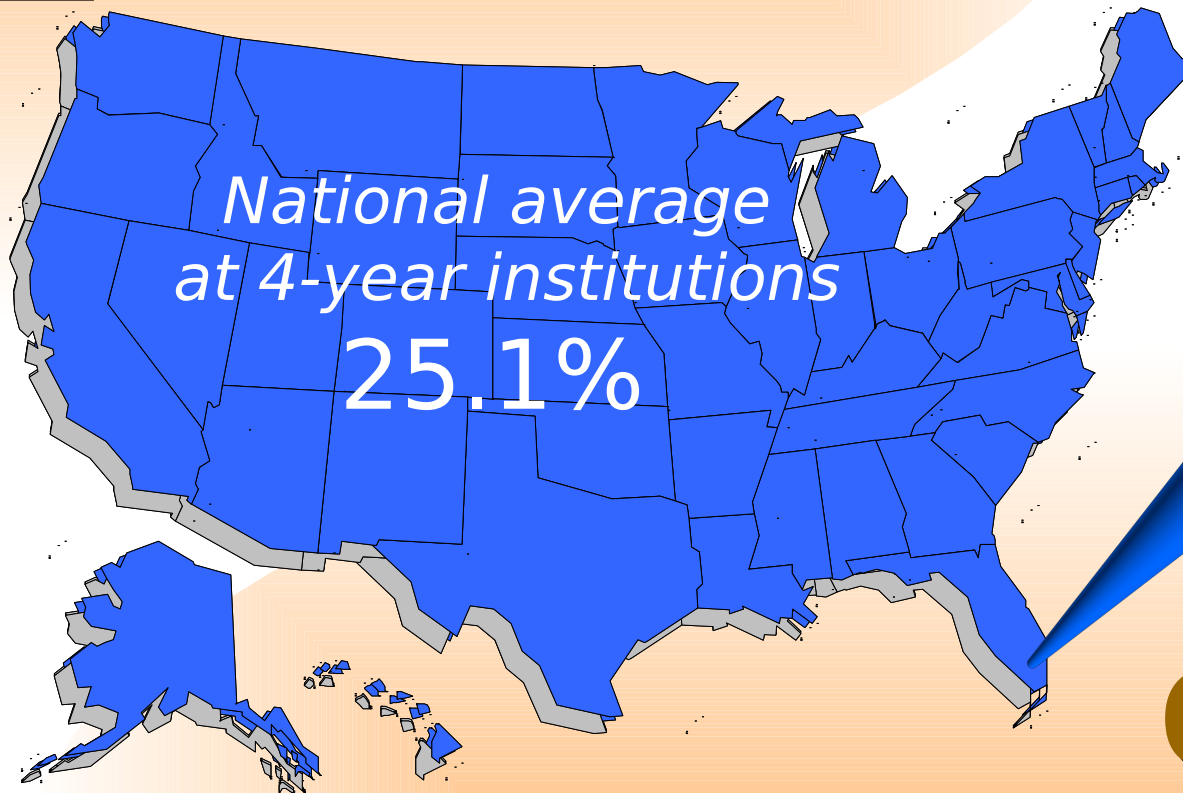
874 Offering Master's Degrees

2271 Offering Baccalaureate Degrees

3940 U.S. Accredited Institutions of Higher Education



# University Minority Enrollment

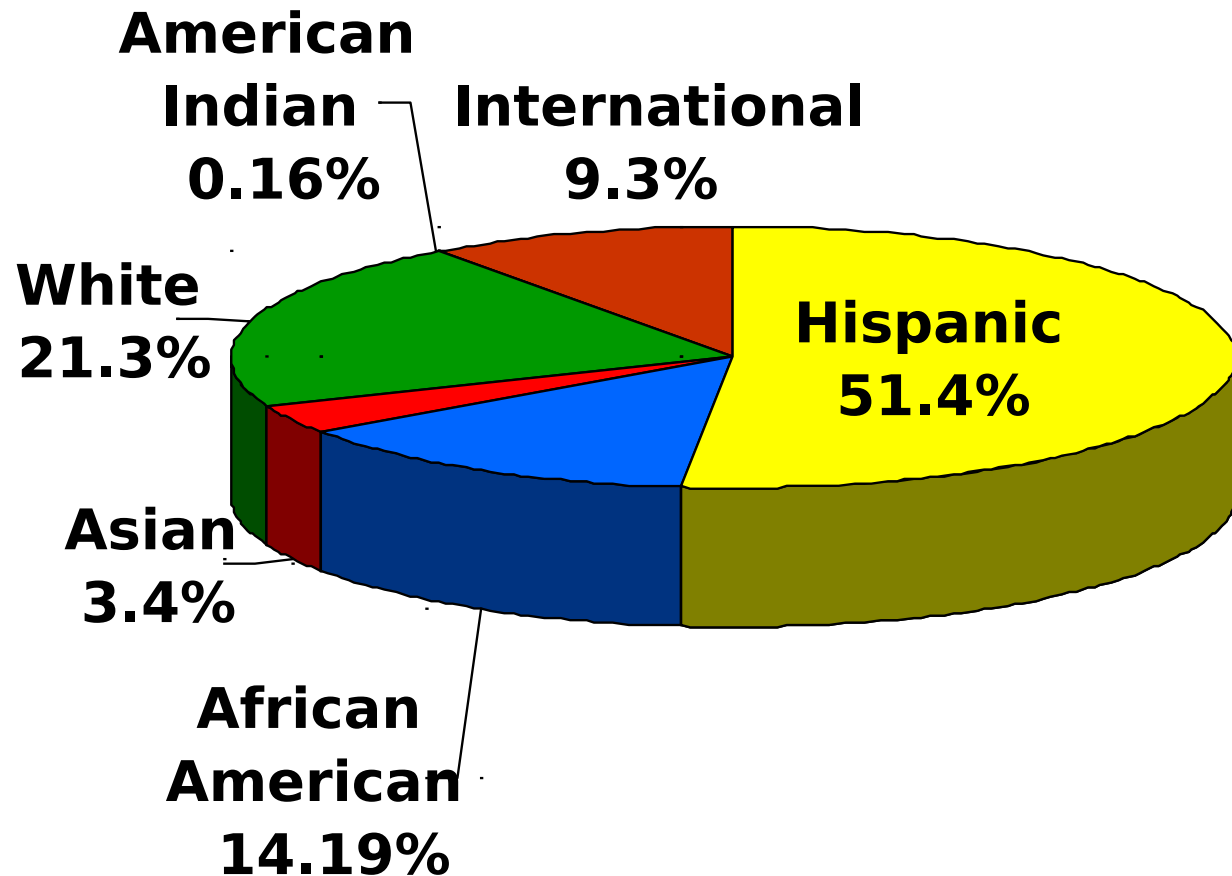


**FIU**  
**(Fall 2001)**  
**65.5%**

**FIU graduates 3% of the  
nation's Hispanic graduates.**



# Composition of Student Enrollment (Fall 2001)





# FIU – Top Minority Institution

FIU is:

1<sup>st</sup> in graduating Hispanics

3<sup>rd</sup> in graduating total minorities

17<sup>th</sup> in graduating African  
Americans



# Golden Panther Army ROTC





# FIU's Research Interests Themes

# FIU's Strategic Themes



**Environment**



**International**



**Information**



**Health**



**Urban**

*Research emphasis centers on these five themes*

*environment*

shaping the world of tomorrow

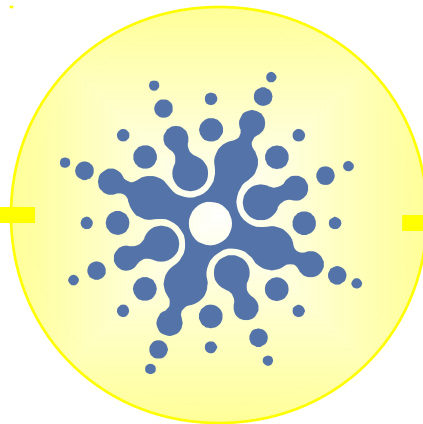
**today**

*information  
technology*

*energy*



# One-Stop Shopping Entity



**Commercial**

**Federal**

**Military**

**Nuclear Industry**

**Academia**



## U.S. Industry Partnerships



## International Partnerships



## Research and Development



HCET  
Hemispheric Center  
for Environmental  
Technology

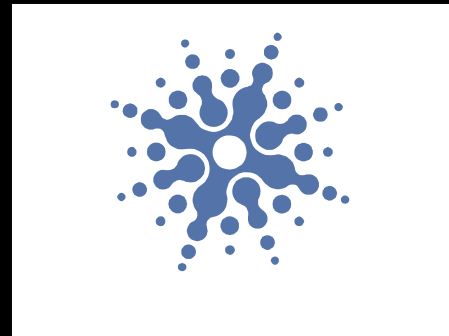
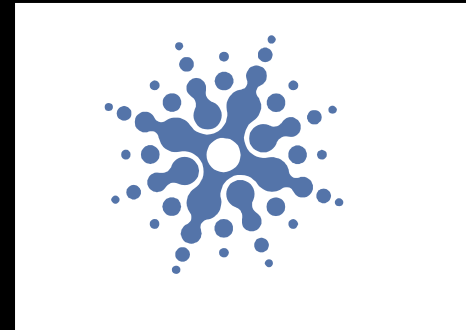
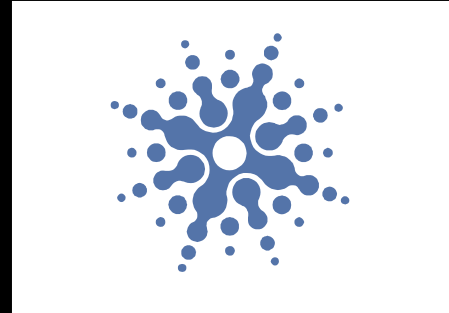


## Conferences and Training



# Environment

- **Aerosols, Nanoparticle Research**
- **Analytical Laboratory Services**
- **Brownfields Redevelopment**
- **Civil / Environmental Engineering**
- **Contamination Fate and Transport Research**
- **Deactivation and Decommissioning**
- **Environmental Monitoring and Sensors**
- **Groundwater Modeling**
- **Hazardous and Radioactive Health and Safety**
- **Impact Statements, Assessments and Analysis**
- **ISO 9000 and 14001 Management Systems**
- **Large Bore Piping Characterization and Decontamination Services**
- **Long Term Stewardship**
- **Pipeline Transport and Slurry Research**
- **Property Assessments**
- **Remedial Design and Implementation**
- **Site Characterization**
- **Stormwater Pollution Prevention**

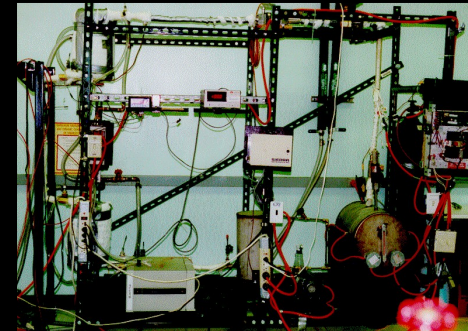
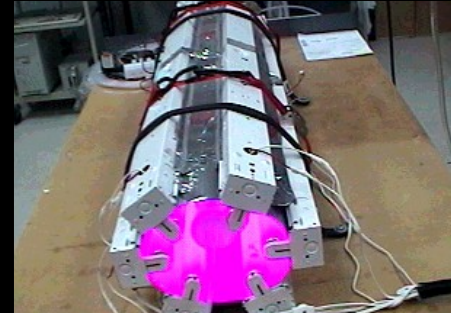


# Energy

- **Advanced Catalyst and Reaction Engineering Research**
- **Advanced Scientific Computing Research**
- **Alternative Energy Sources Research and Development**
- **Biomass / Waste to Energy Research**
- **Clean Coal Combustion Research**
- **Facilities Engineering Services/ HVAC and Fire Systems Engineering and Design**
- **Fossil Energy Research and Development**
- **Fuel Cells Research**
- **Internal Combustion Engine Research**
- **Microturbines Research**
- **Multiphase Flows and Heat Transfer Research**
- **Oil and Gas / Petrochemical**



The Ballard® Mark 900 Series  
Fuel Cell Power Module



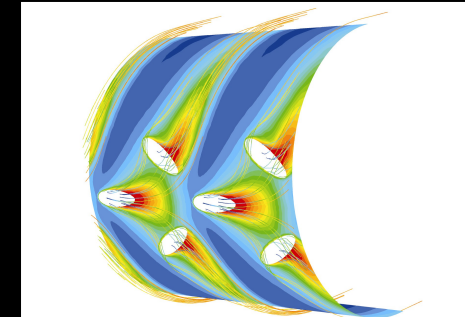


# Information Technology

Computer-Based Training...  
Internet 2...  
Decision Modeling and Decision  
Support Systems...  
Data Management and Mining...  
GIS...

High-Performance Database  
Research...  
Image Processing...  
Internet-Enabled Multimedia  
Information Repositories...  
Knowledge Management...

Network Design...  
Records Management...  
Software Engineering and Advanced  
Software Technology...  
Software and Systems  
Dependability...  
Software Fault Tolerance...  
UML modeling...  
Virtual Offices...  
Web Development...  
XML multi-structure information



# Future Workforce

Since 1995,  
HCET has  
trained over  
500 student  
interns in  
federally-  
funded  
projects

Training



the next  
generation



of  
scientists

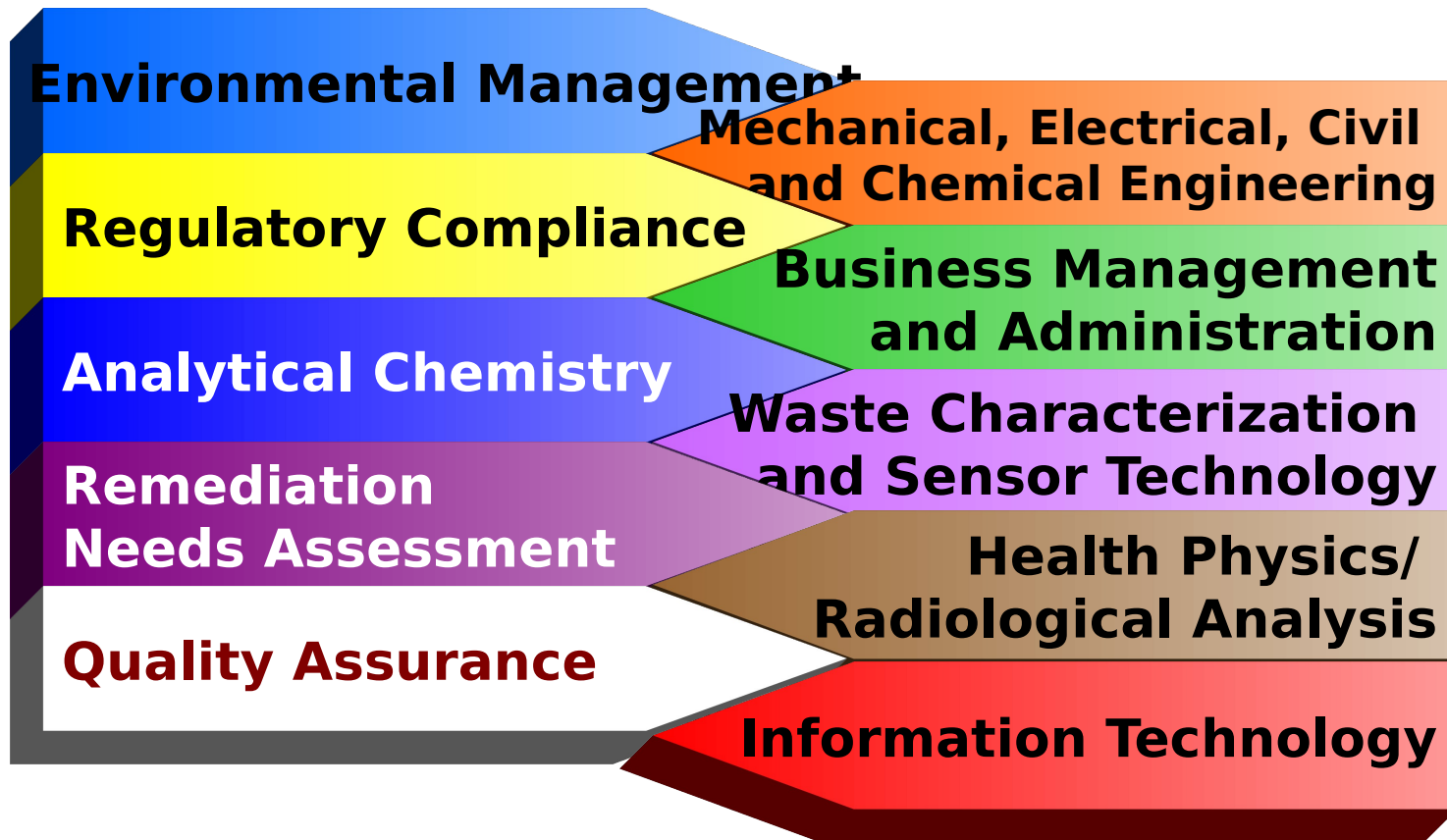


and  
engineers





# Technical Expertise





# Experience

## Over 300 Years of Demonstrated Field Experience

*Environmental  
Remediation*

*QA/QC*

*Field Assessment  
and Inspection*

*Construction*

*Site Operations*

*Engineering  
Title I/II/III*

*Environmental  
Health & Safety*

*Environment  
al  
Engineering  
Modeling,  
Simulation  
& Visualization*

*Facility Deactivation &  
Decommissioning*

*Waste  
Management*

*Information  
Technology*

*Project  
Management and  
Controls  
Plant  
Maintenance*





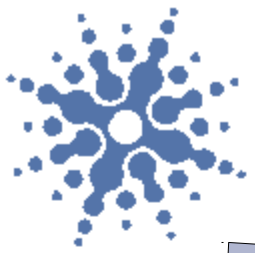
# Select Environment and Energy Clients

- Department of Energy
- Department of Defense
- Environmental Protection Agency
- United States Air Force
- National Aeronautics and Space Administration
- National Institute of Safety and Health
- Florida Department of Transportation
- 3M
- Bechtel-Jacobs, LLC
- LTC Americas
- ICF Kaiser
- Science Applications International Corporation
- Practical Machine engineering
- Raytheon E-Systems
- LAW Engineering
- US Army Corps of Engineers
- Battelle Memorial Institute
- Bureau of Land Management
- Bechtel-National
- Bechtel-Jacobs, LLC
- EG&G
- Georgia Power
- Illinois Power
- Martin Marietta
- Rust Remediation
- Texas Utilities
- Waste Management, Inc.
- Westinghouse
- Pacific Northwest National Laboratory
- Pratt & Whitney Corporation
- Burns and Roe
- CH2M Hill
- Montgomery Watson
- First Choice Technologies
- Ogden Engineering
- IT/OHM Corporation
- Duke Power
- Precision Labs
- Colorado Center for Environmental Management
- UNC, Inc.
- Babcock & Wilcox
- Burroughs/Unisys
- Commonwealth Edison
- Fluor Daniel
- ICF Kaiser
- Management Analysis Company
- Shell Oil
- US Aluminum Corporation
- MSC Technology Applications
- British Nuclear Fuels Ltd.
- AEA Technology
- EarthTec
- E2M
- RSIS
- Hydrogeologic
- MITKEM
- NRCE
- Wendy Lopez, Inc.



# Select IT Clients

- U. S. DoD
  - ◆ Brooks Air Force Base
  - ◆ U. S. Army Communications and Electronics Command (CECOM)
  - ◆ Defense Information Systems Agency
- U. S. DoE
  - ◆ Office of Environmental Management
  - ◆ Office of Science and Technology
  - ◆ Office of Nuclear Energy, Science and Technology
- NASA
  - ◆ Kennedy Space Center
  - ◆ Ames Research Center
  - ◆ Goddard Space Flight Center
- Cambridge Technology Partners
- Stratasys
- SAIC
- Lab Data Corporation
- RS Information Systems
- Engineering-Environmental Management, Inc.
- Fluor Fernald
- Hemispheric Energy Initiative
- Miami-Dade Dept. of Environmental Restoration Management
- Wendy Lopez & Associates, Inc.



# HCET is Site Supportive





# Spotlight: HCET's Tampa Office

- In a landmark association between DOD and an HBCU/MI, HCET established a site office in Tampa, Florida, to serve as an IT “helpdesk” for more than 3,000 users
- Supporting US Central Command's Computers, Communication, Command and Control division, which provides for the planners of military operations in Afghanistan, HCET-Tampa is assisting Operation Enduring Freedom
- HCET-Tampa is responsible for:
  - ◆ Network Administration
  - ◆ Computer Maintenance
  - ◆ User Support
  - ◆ Asset Management for all telecommunications equipment at USCENTCOM, both at headquarters and overseas



# Spotlight: HCET's San Antonio Office

- Established to provide support for the Department of Defense, HCET's Texas Regional office delivers research, technology development, information services, and training in partnerships with the Air Force, Army, and Navy, and pursues initiatives with commercial organizations serving government agencies.
- Clients and projects include:
  - ◆ Brooks Air Force Base
  - ◆ Air Force Center for Environmental Excellence, mentor-protégé programs
  - ◆ Kelly Air Force Base, soil decontamination
  - ◆ Lackland and Randolph Air Force Bases, information technology training
  - ◆ Community development support



# Newest Projects for DOD

## - *Improved Web*

## *Communication Tool*

- Client: Assistant Secretary of the Army  
(Installations and Environment)
- Scope:
  - ◆ Upgrade the existing ASA (I&E) website to improve access to up-to-date information on personnel, programs and activities, and convey organizational mission and vision
  - ◆ Utilize new information technologies to provide enhanced graphical user interface and improved navigation
  - ◆ Facilitate user-appropriate, secure, easy exchange of information and correspondence between staff and other individuals designated by ASA (I&E), as well as visitors to the website





# Newest Projects for DOD

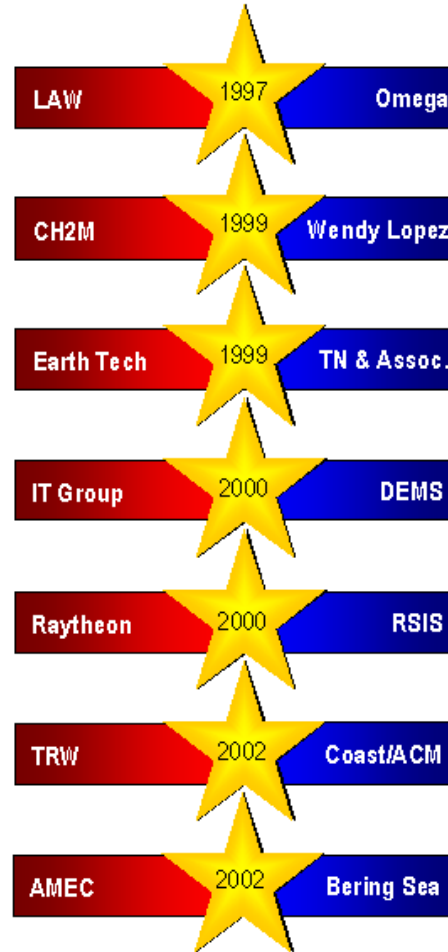
## – *Instrumentation*

- Client: Department of Defense
- Scope:
  - ◆ Acquire advanced diagnostic equipment for three-dimensional micro- and macro-flow field measurement in support of DOD-related projects



# Mentor-Protégé Program

- AMEC Earth & Environmental, Inc. (Formerly Ogden Environmental) – Bering Sea
- AMEC Earth & Environmental, Inc. (Formerly Ogden Environmental) – Zambrana Engineering, Inc
- CH2M Hill – NRCE
- CH2M Hill – Wendy Lopez & Associates, Inc.
- Earth Tech, Inc. – Bhate Environmental Associates, Inc.
- Earth Tech, Inc. – EnTech, Inc.
- Earth Tech, Inc. – MTA
- Earth Tech, Inc. – RMCI
- Earth Tech, Inc. – TN & Associates, Inc.
- IT Group – Deerinwater Environmental Management Services, Inc.
- LAW Engineering – Hydro



*Of the 20 relationships that FIU has participated in, seven have been given the Nunn-Perry Award*

- LAW Engineering – MITKEM
- LAW Engineering – Omega Environmental Services, Inc.
- Montgomery Watson – On Site Environmental Labs
- Montgomery Watson Americas, Inc. – E2M
- Montgomery Watson Americas, Inc. – MKM Engineers, Inc.
- Raytheon Systems Company – RS Information Systems, Inc.
- Roy F. Weston, Inc. – Dougherty Sprague Environmental Inc.
- SAIC – Lloyd Lamont Design, Inc.
- TRW – Coast/ACM [FIU relationship]



# Contract Vehicles

- FIU-HCET has a number of contract vehicles in place
  - ◆ Communications and Electronics Command, U.S. Army (CECOM)
  - ◆ Defense Information Systems Agency
    - Minority Institution Information Technology Support Services (DISA MITSS)
    - DISA NexGen
    - DISA Encore
  - ◆ Combined Mission Support (CMS) (USAF-All agency)
    - Franchise Business Activity



# Recent Awards

## Subcontractor of the Month

HCET was selected as the Bechtel Jacobs Environmental Health and Safety Subcontractor of the Month for September 2001. The award is based on their management of the decontamination and decommissioning of the metal recovery facility at the Oak Ridge National Laboratory in Oak Ridge, Tennessee.



HCET's Enhanced Work Plans were the key to full personnel commitment and accident-free decontamination and decommissioning at Oak Ridge National Laboratory.

## Energy 100 Award

HCET was part of the team that won the Department of Energy's Energy 100 Award honoring the best scientific and technological accomplishments of the DOE during this century.





# Recent Awards (cont.)



## **Minority Educational Institution of the Year (Bechtel Jacobs)**

Bechtel Jacobs Company recognized FIU as the Minority Educational Institution of the Year for HCET's role in the decommissioning of a former nuclear fuel reprocessing plant, citing FIU's "commitment to excellence in safe performance of their subcontract and their commitment to responsible corporate citizenship." The award recognizes HBCU/MIs that "set the standard, raise the bar, and distinguish themselves from their peers" and "best demonstrate a shared vision and shared commitment with BJC for performance, productivity, and customer satisfaction."

## **Minority Educational Institution of the Year (BWXT Y-12)**

In addition to the Bechtel Jacobs award, FIU has received BWXT Y-12's Minority Educational Institution of the Year Award for HCET's technical assistance to the Minority Educational Institutions Technology Partnerships Program (MEITPP) in support of BWXT's Advanced Technologies Division.



# Successful Support Model



**INSPECTIONS**

Site Inspection



BRAC



Site Remediation



Pollution  
Prevention and  
Beneficial Reuse



Workforce  
Transition

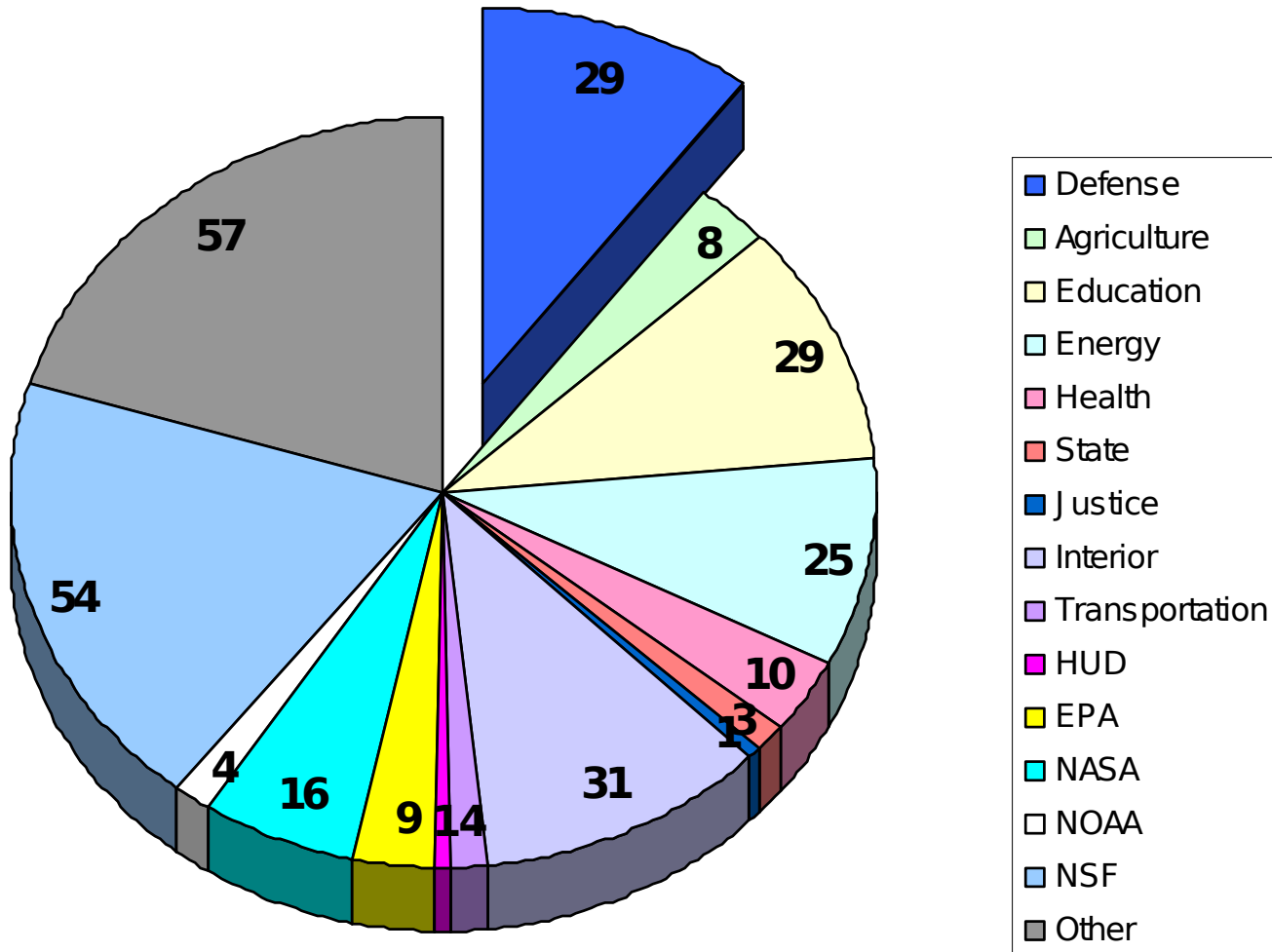


Data Repository  
and Decision  
Management



# FIU's Federal Funding

Federal contracts and grants awarded to FIU in the past





# HCET's Benefits to Army Environmental Programs

- HCET offers technology identification and development capabilities for the solution of site-specific needs
- HCET facilitates the formation of industry-academia-government partnerships
- HCET provides access and links to Latin American and Caribbean clients
- HCET performs market analyses and assists in the commercialization of environmental technologies





# Path Forward

- Contract vehicles are in place
- Resources are available
- Capabilities are robust
- FIU needs WORK
  - ◆ FIU can serve the Army in a number of ways, such as...



# Opportunities For HCET To Support Army

- Near-Term Opportunities
  - ◆ Hazardous Building Materials Abatement and/or Stabilization Technology Development and Deployment
    - Lead Based Paint Management
    - Asbestos Abatement/Stabilization Techniques and Technologies
    - Web-Enabled GIS-Based Building/Facility Assessment and Inventory Tracking System
  - ◆ Waste Disposition Assessments
    - Determination of “Lowest Cost” Disposition Options
    - Provide Waste Disposition Options Assessments To Installation Waste Generators
    - Ensure Installation Waste Generators are Aware of All Waste Treatment/Disposition Options
    - Treatability Studies and Treatment Technology Development for Problematic Waste Streams
    - Provide Analytical Chemistry Laboratory services in our certified facilities
    - Provide supercomputing services such as image and data processing, computer-aided design, and computational modeling, simulation, and visualization applications in fluid dynamics, heat transfer, combustion, weather, and groundwater



# Opportunities For HCET To Support Army

- Mid-Term Opportunities
  - ◆ Soil & Groundwater Remediation Technology Optimization
    - Review of ROD Implementation and Effectiveness to Assess “Optimum Technology Deployment”
    - Development of Web-Enabled GIS-Based Fate & Transport Modeling Capabilities
      - Support Programmatic Review and Support of Installation Remediation Effectiveness
    - Development of Remotely Deployed Sensor Technology to Monitor Remediation Progress and Compliance With Cleanup Goals
    - Development of Monitored Natural Remediation Technologies and Support Tools
  - ◆ Pollution Prevention Technology Development
    - Cleaning Technology/Methodology Assessment and Alternatives Development
      - Machine Parts
      - Facilities



# Opportunities For HCET To Support Army

- Long-Term Opportunities
  - ◆ Development of Disposition Alternatives for Persistent Organic Pollutants (POPS)
  - ◆ Development of POP Alternatives to Support Mission Needs
  - ◆ Preemptive Contaminant Management/Replacement
    - Continuous Assessment of Army Needs and Development in Force Support and Weapons Systems to Anticipate Potential Environmental Risks/Insults and Prevent and/or Mitigate in the Development and Deployment Phase



# Words of Recognition

*"HCET has compiled an impressive list of technological accomplishments, from deactivation and decommissioning technology to sensor technology, robotics, and tank waste remediation."*

*-- Spencer Abraham, Secretary of Energy*



Secretary of Energy Spencer Abraham discusses HCET's robotic Remote Harsh Environment Surveyor with FIU and HCET personnel

*"The work being done here [at HCET] is a reaffirmation of a belief that [President Bush] and I share that some of the best solutions to some of the biggest problems we have today are happening out in the field."*

*-- Christie Whitman, Administrator of the Environmental Protection Agency*



Christie Whitman, EPA Administrator, and FIU and HCET personnel in HCET's Waste Processing Research Lab



# Contact Information

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